

**Operating Instructions  
Thermo Scientific Barnstead GenPure  
Water Purification System  
with xCAD**



Serial no.: .....

**These Operating Instructions must be read prior to installation and start-up!**

50131281 Stand: 11.12 Rights to technical changes reserved

## EC-Declaration of Conformity

in accordance with the EEC machine directive 2006/42/EC, appendix II A

We hereby certify that the following described machine in its conception and form put by us into circulation is in accordance with all the relevant essential health and safety requirements of the EC machinery directive 2006/42/EC as amended and the national laws and regulations adopting this directive.

This declaration is no longer valid if the machine is modified without our consent.

**Manufacturer:** Thermo Electron LED GmbH  
Robert-Bosch-Straße 1  
D-63505 Langenselbold

### Description of the machine:

function: Ultrapure water system

type: GenPure with xCAD, GenPure UF with xCAD, GenPure UV with xCAD,  
GenPure UV/UF with xCAD, GenPure UV-TOC with xCAD, GenPure UV-  
TOC/UF with xCAD

article number: bench version: 50131286, 50131250, 50131254, 50131252, 50131296,  
50131298  
wall version: 50131300, 50131302, 50131317, 50131315, 50131321,  
50131323

### The agreement with further valid guidelines/regulations following for the product is explained:

EMC Directive (2004/108/EC)

### Reference to the harmonised standards:

DIN EN ISO 12100-1 Safety of machinery, Part 1: Basic terminology  
DIN EN ISO 12100-2 Safety of machinery, Part 2: Technical principles  
DIN EN ISO 14121-1 Safety of machinery, Part 1: Risk assessment  
DIN EN 61326-1

### Authorized person for the technical documentation:

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Niederelbert, 1. April 2010

Detlef Opp, Head of Technical documentation

  
Signature

## Preface

Dear Sir or Madam,

In deciding to purchase a high-purity water system of type **GenPure with xCAD** you have selected a high-quality product.

Thank you for the confidence you have placed in us.

Before you start to install and operate your pure water system, please carefully read the information given in these Operating Instructions on how to correctly carry out installation and how to properly operate the system.

This is particularly important, as we, the manufacturer, cannot accept liability for any damage occurring as a result of improper operation of this system, or from use of it for other than the intended purpose.

Niederelbert, 20.03.2008

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## 2. Explanatory notes on the operating instructions



EU Mark of Conformity



CSA - admission



Important operating and/or maintenance instructions! Read the operating instructions with due care.

Risk of electric shock! Electrical work on the system is only to be carried out by qualified personnel.



General information! Particularly important notes are marked with this information sign.



Protective conductor connection

Connect the power supply to an electrical socket with a protective connection.

The information provided in these operating instructions is only valid for the system which has the serial number which is to be entered on the front page.



Please enter the serial number\* of your GenPure with xCAD system in the space provided on the front page.

\* Read the serial number of your ultra pure water system from the type plate.

For quick and correct service, please include the following information on all inquiries and replacement parts orders which relate to your system:

- The serial number
- The article number

### 3. Transport and packaging

Ultra pure water systems are carefully checked and packed prior to shipment but, despite this, there is always a possibility that damage could occur to them during shipment.

#### 3.1 Examination on receipt

- Check the completeness of the delivery against the shipping papers.



##### **Is the packaging damaged?**

- Check the system for damage.

#### 3.2 Complaints

Should the system have been damaged during transport:

- Immediately contact the post office, railway or forwarding agent\*.
- Keep the packaging, including the outer cardboard box, for a possible inspection and/or return shipment.

#### 3.3 Packaging and return shipment

Whenever possible use the original packaging and packing materials.

Should these no longer be available:

- Pack the system in packing film and then in a strong cardboard box so that it is held shock-proof.



**\* Complaints are only valid for 6 days (after receipt of the goods).  
After this time, the right to claim for damages expires.**

## 4. Safety precautions



**For your own safety, please observe the above safety precautions!**

- GenPure series systems are modern ultra pure water systems that are intended exclusively for the purification of tap water of drinking quality that has been previously treated by reverse osmosis, ion exchange or distillation.
- Do not install the system and operate it until you have read through the appropriate information that is given in these Operating Instructions.
- Lifting and carrying the ultra pure water system, e.g. to the installation location, should be carried out by two people. To lift it, each takes hold of it under the base plate at two corners.
- The CE-Mark becomes invalidated when constructional changes are made to the system or when products of other manufacturers are installed in it.
- Protect the system from frost. The temperature at the installation area must be at least +2°C.
- Observe all general requirements and regulations, including current accident prevention regulations, that are applicable at the ultra pure water system installation area.
- The feedwater pressure must be at least 0.1 bar and at most 6 bar. Should the feedwater pressure be higher, then an additional pressure reducer must be installed.
- Water purification systems must have a safety device acc. to DIN EN 1717 to protect the tap water from contamination.
- A grounded 100 - 240V/ 50/60Hz socket must be available.
- The installation area must be equipped with a floor drain with at least DN 50 pipe (40 mm o.d.).
- When the system is to be wall-mounted, first check the statics of the wall. It must have sufficient load-bearing capacity (for weights, see the technical specifications).
- The maximum operating temperature is +40°C.
- When the system will be at a standstill for a longer period (e.g. or during long holidays), proceed as follows:
  - **Switch the system off.**
  - **Close the supply of feedwater to the ultrapure water system.**
 Damage to the pump will occur should the supply of feedwater be turned off with the system still on. The manufacturer does not accept liability should such damage occur.
- When planning the installation of the system, ensure that there will be sufficient working room for convenient operation of the system and for maintenance such as changing the filter cartridge and opening, breaking and checking connections.



- The term of the guarantee is 12 months!
- Never look directly at a switched-on UV-lamp, because UV light endangers eyesight!  
Never switch the UV-lamp on when it has been taken out of the metal cylinder!
- Only authorized personnel are to carry out UV-lamp replacement.

## 5. Intended purpose

The continuous increase in ultra pure water quality requirements, technologies that are increasingly more sophisticated, lowered detection limits in laboratories and the need of for user-friendly systems and complete solutions were the basic for the development of the novel ultra pure water systems that we call GenPure with xCAD.

GenPure with xCAD has been specifically developed for the production of salts-free, organically pure, particle-free and sterile filtered ultra pure water.

To ensure long service lives of the high-quality purification media, this type of ultra pure water system must be fed with water from upstream pre-purification steps (reverse osmosis, ion exchange, distillation).

### 5.1 Application areas

#### - Analytical techniques in laboratories:

- HPLC ( **H**igh **P**erformance **L**iquid **C**hromatography )
- IC ( **I**on **C**hromatography )
- ICP ( **I**nductive **C**oupled Argon **P**lasma )
- AAS ( **A**tomically **A**bsorption **S**pectrophotometry )
- TOC-Analysis ( **T**otal **O**rganic **C**arbon )
- DNA-Research
- etc.

#### - Preparation of reagents and solutions:

- Cell culture media
- Tissue culture media
- Make-up water for reagents for  
online automatic analyzers

#### - Ultra pure water for demanding laboratory rinsing processes

## 6. Extent of delivery

The GenPure with xCAD ultra pure water system is available in the following versions:

GenPure Standard, article no. 50131286	(Basic system) with xCAD, bench version
GenPure Standard, article no. 50131300	(Basic system) with xCAD, wall version
GenPure UF, article no. 50131250	(Basic system + Ultrafiltration module) with xCAD, bench version
GenPure UF, article no. 50131302	(Basic system + Ultrafiltration module) with xCAD, wall version
GenPure UV, article no. 50131254	(Basic system + UV-photooxidation) with xCAD, bench version
GenPure UV, article no. 50131317	(Basic system + UV-photooxidation) with xCAD, wall version
GenPure UV/UF, article no. 50131252	(Basic system + UV-photooxidation + Ultrafiltration module) with xCAD, bench version
GenPure UV/UF, article no. 50131315	(Basic system + UV-photooxidation + Ultrafiltration module) with xCAD, wall version
GenPure UV-TOC, article no. 50131296	(Basic system + UV-photooxidation and TOC measurement) with xCAD, bench version
GenPure UV-TOC, article no. 50131321	(Basic system + UV-photooxidation and TOC measurement) with xCAD, wall version
GenPure UV-TOC/UF, article no. 50131298	(Basic system + UV-photooxidation and TOC measurement + ultrafiltration) with xCAD, bench version
GenPure UV-TOC/UF, article no. 50131323	(Basic system + UV-photooxidation and TOC measurement + ultrafiltration) with xCAD, wall version

(Please check your version against the article number given on the delivery note)

1x GenPure with xCAD (acc. to the version)	Article no. 5013xx
incl. Assembly kit for bench and wall version, consisting of:	Article no. 50131283 (bench version) Article no. 50131380 (wall version)
Filter cartridge for the ultra pure water system	Article no. 09.2005
Sterile filter capsule, 0.2 µm	Article no. 09.1003
PE-Hose 8 x 1 mm, 2 m	Article no. 18.0036
PE-Hose 6 x 1 mm, 5 m	Article no. 18.0047
PE-Hose 4 x 1 mm, 5 m	Article no. 18.0053
SUB-D Extension cable, 25-pin, 5 m, 2x	Article no. 16.0375
Screw, 4 x 40 mm (only wall version version)	Article no. 21.0001
Plug, 2 x S8	Article no. 21.0035
Screw hook 2 x 5,2 x 50 mm	Article no. 21.0057
Plug 4 x S6 (only wall version)	Article no. 21.0002
Operating Instructions	Article no. 50131281
Tabletop power pack, 24V DC	Article no. 50134196
Universal adapter	Article no. 21.1006
Universal holder	Article no. 21.1007
Connecting cord (rubber connector to nema plug connector)	Article no. 50132200
Connecting cord (rubber connector to british ST plug connector)	Article no. 50132203
Connecting cord (rubber connector to euro plug connector)	Article no. 50132215

Feedwater connector kit consisting of:	Article no. 25.0075
Union nut, R 3/4"	Article no. 14.0003
Insert, R 1/4"	Article no. 14.0189
Screwed connector, R 1/4"	Article no. 14.0075
Gasket, R 3/4"	Article no. 21.5008
PE-Hose, 8 mm o.d., 2 m	Article no. 18.0036
Dirt-trap sieve for union nut, R 3/4"	Article no. 14.0390

## 7. Technical specifications

Demands on the feedwater	
Source	Tap water pretreated by reverse osmosis, ion exchange or distillation.
Silt density index (SDI)	max. 1 for all versions. For water that is not pretreated by reverse osmosis, a prefilter with a 1 µm membrane is recommended.
Feedwater resistance	>0.5 MΩxcm
Free chlorine	max. 0.05 ppm
TOC	max. 50 ppb
Bacteria count	< 100 CFU/ml
Turbidity	< 1.0 NTU
Carbon dioxide (CO <sub>2</sub> )	max. 30 ppm
Silicate	max. 2 ppm
Particles	Filtration to 0.2 µm is recommended to protect the internal filter and, if appropriate, the final filter.
Temperature	2 - 35 °C
Pressure	0.1 - 6 bar

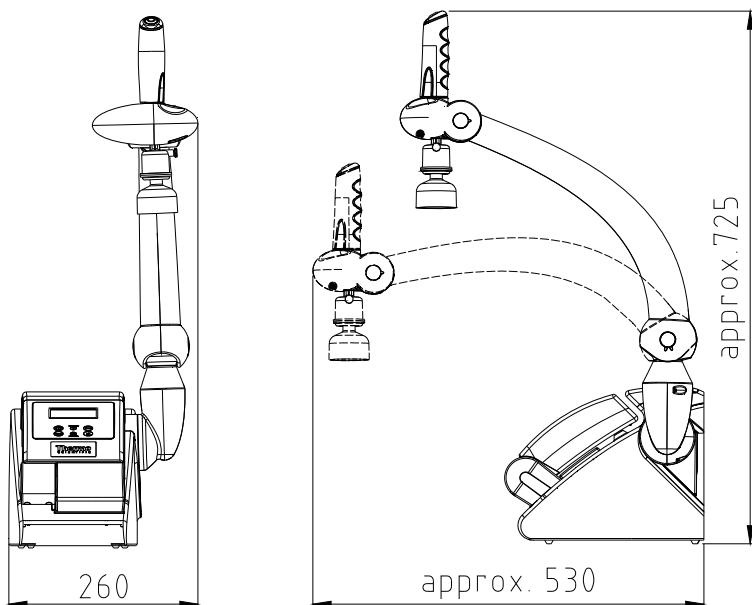
Product water quality							
		Standard	UV	UF	UV/UF	UV-TOC	UV-TOC/UF
Resistance (Reference temperature 25°C)	MΩxcm at 25°C	18.2	18.2	18.2	18.2	18.2	18.2
TOC	ppb	5 - 10	1 - 5	5 - 10	1 - 5	1 - 5	1 - 5
Bacteria	CFU/ml	< 1	< 1	< 1	< 1	< 1	< 1
Bacterial Endotoxines	EU/ml	--	--	< 0.001*	< 0.001*	--	< 0.001*
Particles	> 0.2 µm	< 1/ml	< 1/ml	< 1/ml	< 1/ml	< 1/ml	< 1/ml
Flow rate	L/min**	up to 2	up to 2	up to 1.7	up to 1.7	up to 2	up to 1.7
Flow rate with volume control	L/min	1.2	1.2	1.2	1.2	1.2	1.2

\* Depending on feedwater and appropriate disinfection

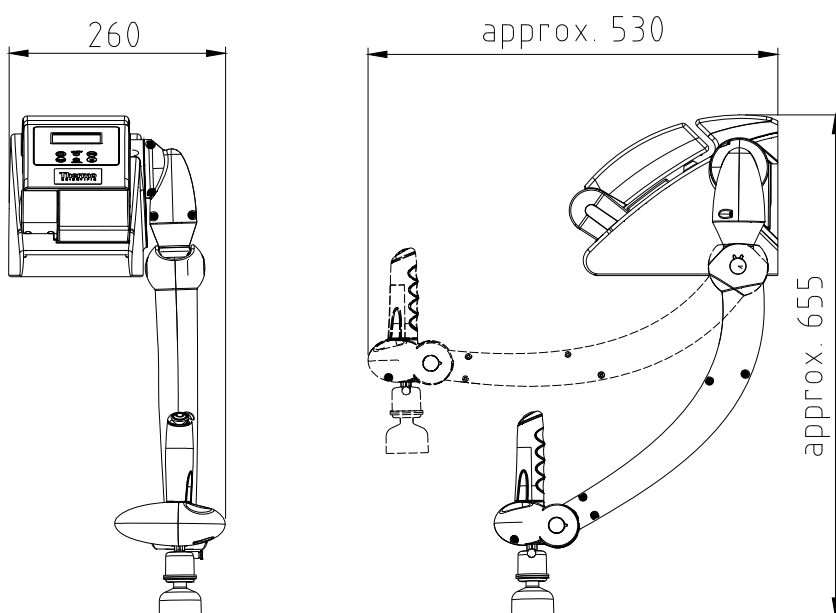
\*\* Depending on feedwater pressure

Dimensions, GenPure	
Height	615 mm
Width	372 mm
Depth	330 mm
Weight:	
GenPure Standard	22 kg
GenPure UF	23 kg
GenPure UV	23 kg
GenPure UV/UF	24 kg
GenPure UV-TOC	24 kg
GenPure UV-TOC/UF	25 kg

Dimensions, xCAD (bench version)	
Height	approx. 725 mm
Width	260 mm
Depth	approx. 530 mm
Weight	12 kg



Dimensions, xCAD (wall version)	
Height	approx. 655 mm
Width	260 mm
Depth	approx. 530 mm
Weight	5 kg



Cell constants, measuring cells	
Conductivity, feedwater	0.16 cm <sup>-1</sup>
Conductivity, after UV-photooxidation	0.01 cm <sup>-1</sup>
Conductivity, ultra pure water	0.01 cm <sup>-1</sup>

Connectors for water genpure	
Feedwater	Hose, 8 mm o.d.
Rinse water	Hose, 8 mm o.d.
Ultra pure water/outlet	Hose, 6 mm o.d.
Ultra pure water/recirculation	Hose, 4 mm o.d.

Connectors for water, xCAD	
Ultra pure water/inlet	Hose, 6 mm o.d.
Ultra pure water/recirculation	Hose, 4 mm o.d.
Ultra pure water/outlet	R 1/4"
Sterile filter outlet	Hose, 8 - 10 mm o.d.

Electrical connections / external switched mode power supply	
Input voltage	AC 100 – 240 V, 50 – 60 Hz, 5 – 3.8 A
Output voltage	DC 24 V, 3,8 A
System connection	DC 24 V, 80 W
Serial interface	RS 232
Protection Class	Class II (external SMPS certified as Class I)

Electrical connections, xCAD	
2x SUB-D socket	25 pin

Airborne sound emission	
Sound-pressure level	49 db(A)

Ambient conditions (DIN EN 61010-1 (VDE 0411-1):2011-02)	
Usage	Indoor rooms
Height	Up to 2000 m
Temperature range	From 5° C to 40° C
Relative humidity	Maximum relative humidity 80 % at temperatures of up to 31° C, linearly decreasing to 50 % relative humidity at 40° C
Line-voltage variation	Not more than ± 10 % of the line voltage
Transient overvoltages	As usually occur in the supply network (overvoltage category II acc. to IEC 60364-4-443). <u>Note:</u> The rated level of transient overvoltage is the withstand impulse voltage acc. to overvoltage category II of IEC 60364-4-443
Ventilation requirements	There are no special requirements with regard to ventilation.
Degree of pollution	2

Materials of parts that contact water	
Pressure reducer	NBR
Pump head	Nylon with glass fibre
UV-Lamp	High purity quartz
UV-Housing	Stainless steel
Filter cartridge	PP
UF-Housing	Polycarbonate
Rinsing solenoid valve	PA
Dispensing valve	PVDF
Conductivity measuring cell	POM, stainless steel
Distributor block	POM
Connections	POM
Hoses	PE
Gaskets	EPDM



## 8. Description of how the systems function

### GenPure versions: Standard, UV, UF, UV/UF with xCAD

Tap water that has been pretreated upstream by reverse osmosis, ion exchange or distillation passes through a pressure reducer and into the GenPure ultra pure water system, where the conductivity is monitored. A pump forces this feedwater through UV-photooxidation (only with GenPure UV and GenPure UV/UF) and the filter cartridge, from where it flows through an ultrafiltration module (only with GenPure UF and GenPure UV/UF), after which the conductivity is measured by a special conductivity measuring cell (with temperature compensation).

When ultra pure water is taken from the system, it flows through a sterile filter before reaching the dispensing outlet. During interval operation, the water is circulated around an internal circuit at regular intervals.

### GenPure versions: UV-TOC, UV-TOC/UF with xCAD

Tap water that has been pretreated upstream by reverse osmosis, ion exchange or distillation passes through a pressure reducer and into the GenPure ultra pure water system, where the conductivity is monitored. A pump forces this feedwater through UV-photooxidation, after which the conductivity is again measured to determine the TOC-value. The water then flows through the filter cartridge and an ultrafiltration module (only with GenPure UF-TOC/UF), after which the conductivity of it is measured by a special conductivity measuring cell (with temperature compensation).

The TOC value is calculated by taking the difference between the values measured by the measuring cells QIA300 and QI302.

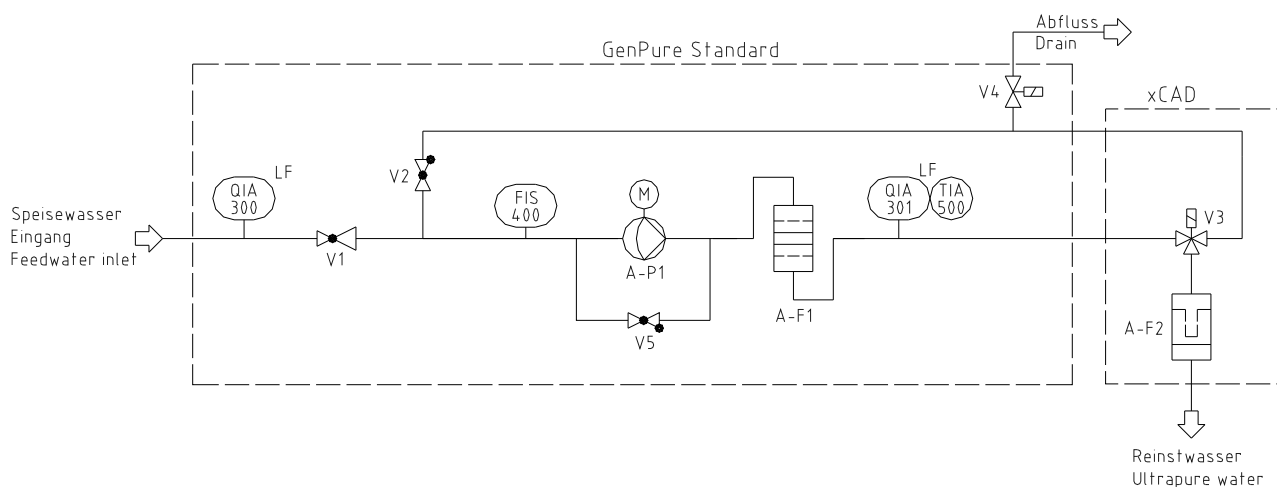
The measurement range is 0 - 30 ppb.

When this measurement range is exceeded, the number 99 is shown in the display instead of the measured value.

In Stand-by operation, "\_\_\_" is shown instead of the measured value.

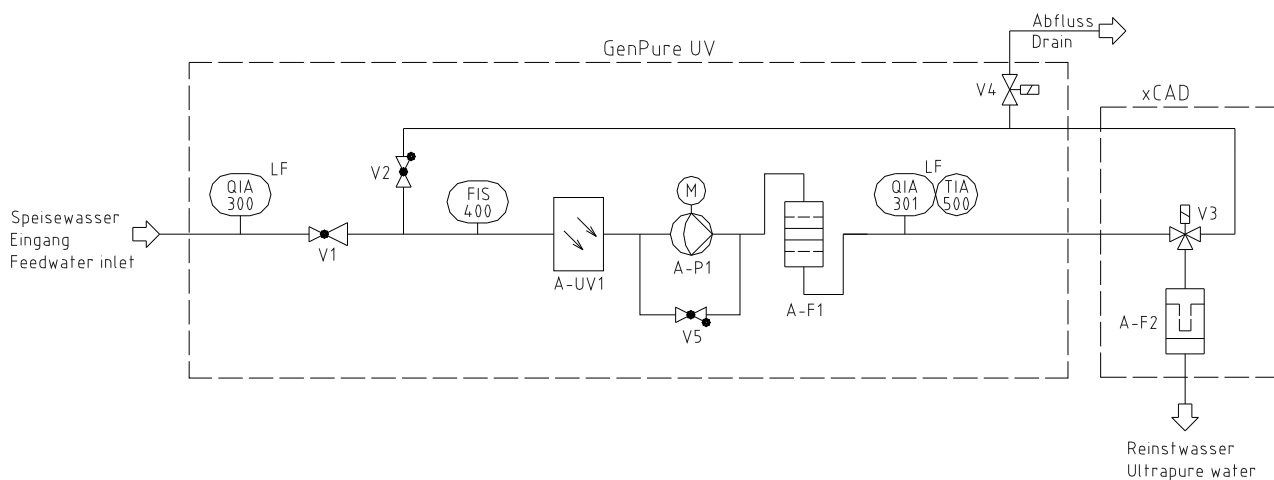
When ultra pure water is taken from the system, it flows through a sterile filter before reaching the dispensing outlet. During interval operation, the water is circulated around an internal circuit at regular intervals.

## 8.1 Flow chart, GenPure Standard with xCAD



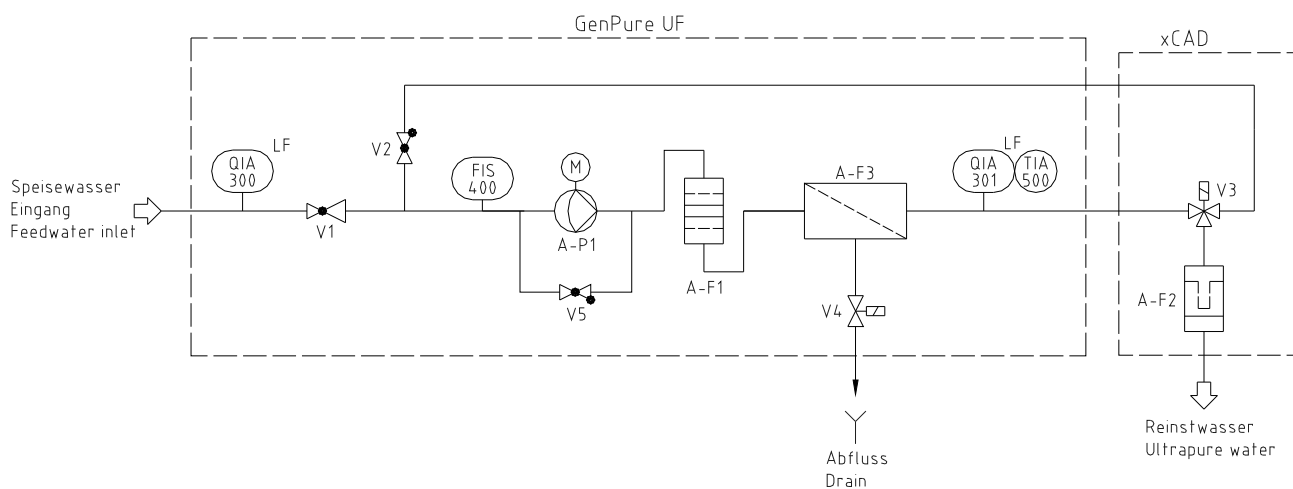
A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
FIS400	Digital flowmeter
QIA 300	Conductivity, feedwater
QIA 301	Conductivity, ultra pure water
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Solenoid valve
V4	Rinsing solenoid valve
V5	Check valve 1 bar

## 8.2 Flow chart , GenPure UV with xCAD



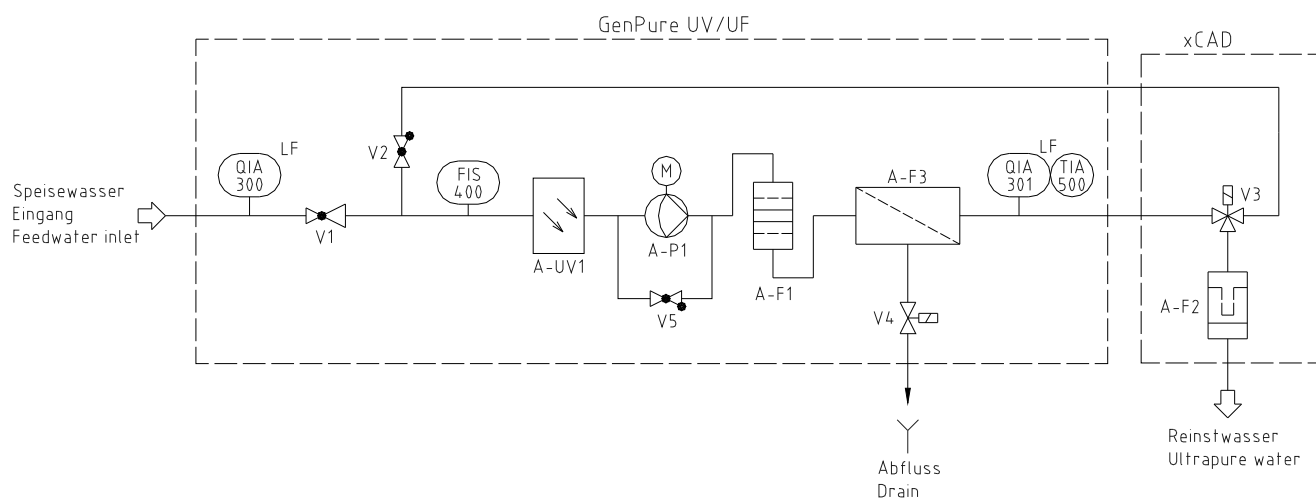
A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
A-UV1	UV-Photooxidation
FIS400	Digital flowmeter
QIA 300	Conductivity feedwater
QIA 301	Conductivity, ultra pure water
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Solenoid valve
V4	Rinsing solenoid valve
V5	Check valve 1 bar

### 8.3 Flow chart, GenPure UF with xCAD



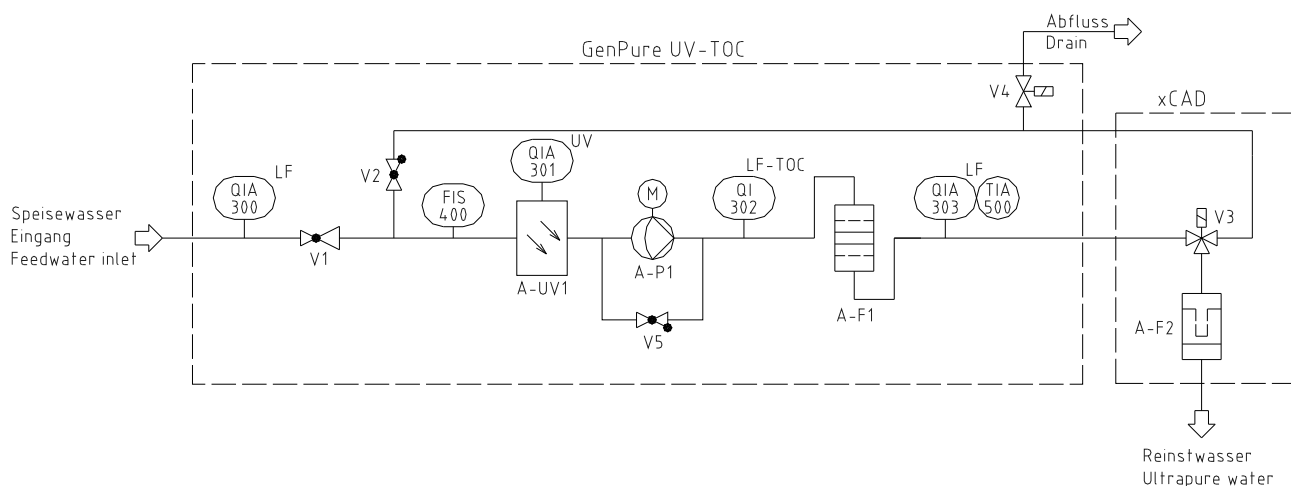
A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
FIS400	Digital flowmeter
QIA 300	Conductivity, feedwater
QIA 301	Conductivity, ultra pure water
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Solenoid valve
V4	Rinsing solenoid valve
V5	Check valve 1 bar

## 8.4 Flow chart, GenPure UV/UF with xCAD



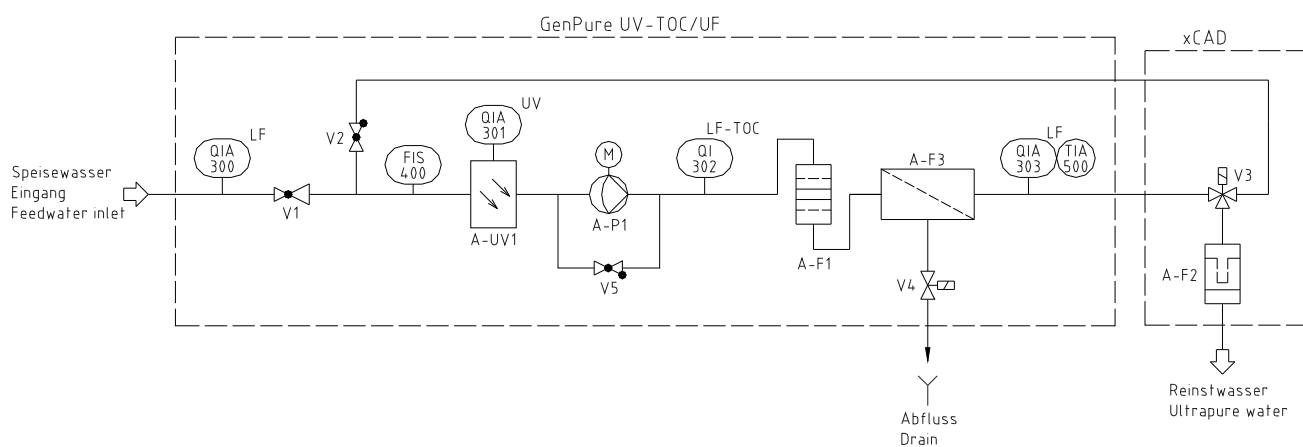
A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
A-UV1	UV-Photooxidation
FIS 400	Digital flowmeter
QIA 300	Conductivity, feedwater
QIA 301	Conductivity, ultra pure water
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Solenoid valve
V4	Rinsing solenoid valve
V5	Check valve 1 bar

## 8.5 Flow chart, GenPure UV-TOC with xCAD



A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
A-UV1	UV-Photooxidation
FIS400	Digital flowmeter
QIA 300	Conductivity, feedwater
QIA 301	UV-Intensity
QI 302	Conductivity, TOC measurement
QIA 303	Conductivity, ultra pure water
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Solenoid valve
V4	Rinsing solenoid valve
V5	Check valve 1 bar

## 8.6 Flow chart, GenPure UV-TOC/UF with xCAD



A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
A-UV1	UV-Photooxidation
FIS400	Digital flowmeter
QIA 300	Conductivity, feedwater
QIA 301	UV-Intensity
QI 302	Conductivity, TOC measurement
QIA 303	Conductivity, ultra pure water
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Solenoid valve
V4	Rinsing solenoid valve
V5	Check valve 1 bar

## 9. Setting up the system

### 9.1 Installation area

Take the following criteria into consideration when selecting the installation area:

- Feedwater pressure at least 0,1 bar, at most 6 bar
- Lowest temperature +2°C
- Level standing surface
- When the system is to be wall-mounted: A smooth wall is required. Check the statics of the wall, it must be sufficiently loadable (for weight, see Technical specifications)
- Floor drain, DN 50
- Free gravity fall to drain.  
Should no such floor drain be available, then, for safety reasons, a water watcher (article no. 16.0129) must be installed!

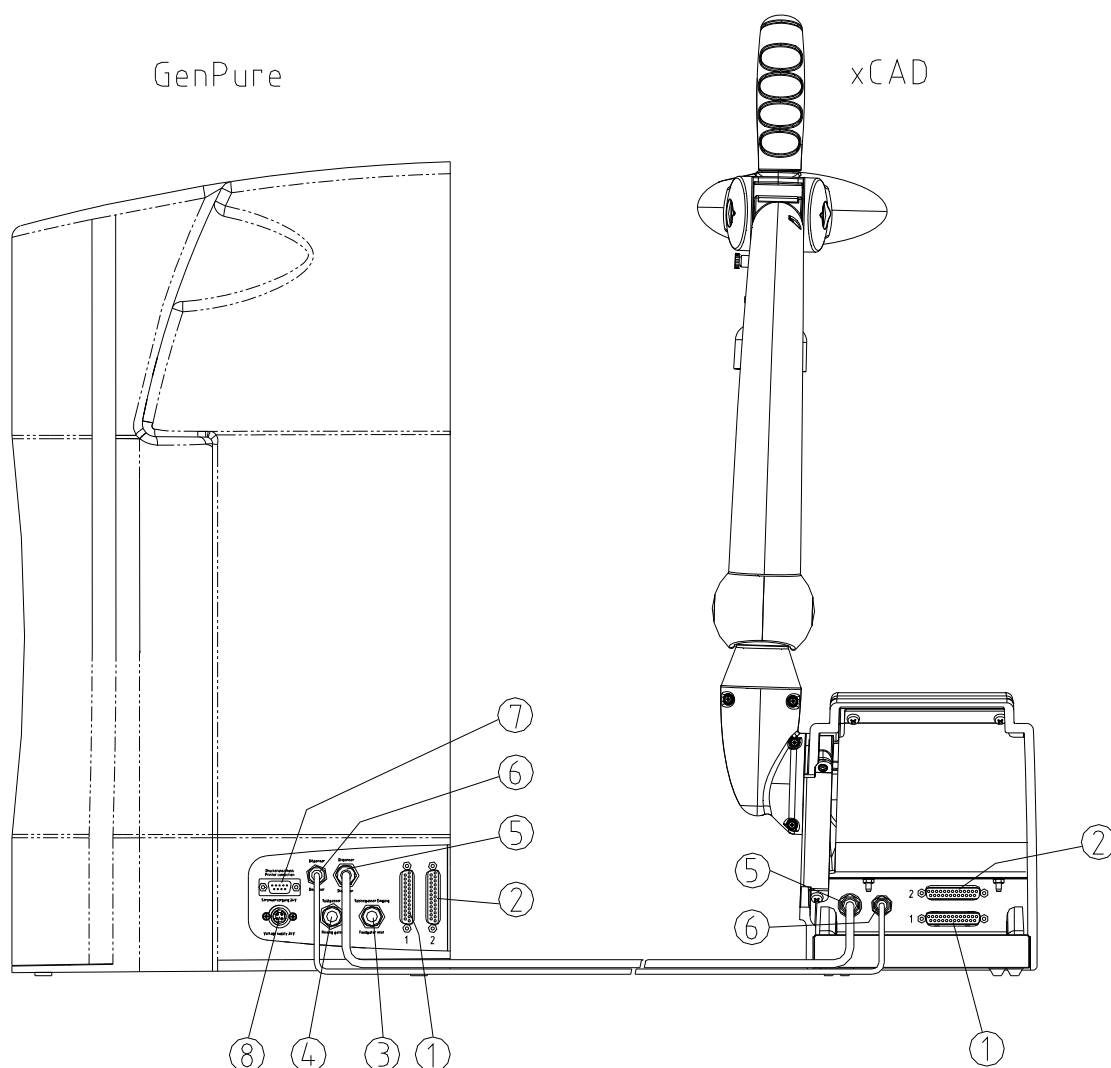


**Free gravity fall to drain must be ensured !**

- Safety socket, 100 - 240V, 50/60Hz
- Sufficient working space around the system (filter replacement, etc.)
- It must be easy to operate and monitor the system
- R 3/4" Tap water connector



## 9.2 Connectors

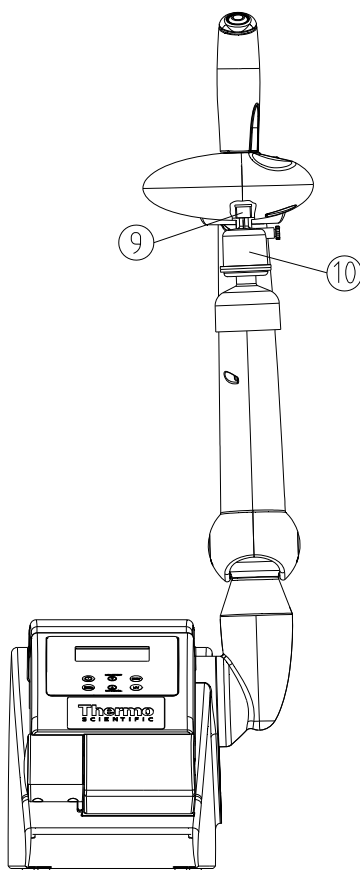


### Connectors, GenPure:

- 1) Connector for 25 pin sockets (system control)
- 2) Connector for 25 pin sockets (system control)
- 3) Feedwater connector, 8 mm o.d.
- 4) Rinse water connector, 8 mm o.d.
- 5) Ultra pure water connector, 6 mm o.d. (to xCAD)
- 6) Ultra pure water connector, 4 mm o.d. (to xCAD)
- 7) Connector for optional printer (art. no.: 09.2207)
- 8) Mains plug/100 - 240V, 50/60Hz power supply

### Connectors, xCAD:

- 1) Connector for 25 pin sockets (system control)
- 2) Connector for 25 pin sockets (system control)
- 5) Ultra pure water connector, 6 mm o.d. (to GenPure)
- 6) Ultra pure water connector, 4 mm o.d. (to GenPure)
- 9) Dispensing valve outlet, R 1/4" female thread
- 10) Sterile filter 0,2 µm



### 9.3 General setting up of the system / bench version xCAD

**Proceed as follows to set your GenPure with xCAD (bench version) ultra pure water system up ready for use:**

Stand the GenPure system with the xCAD where it is to be installed.

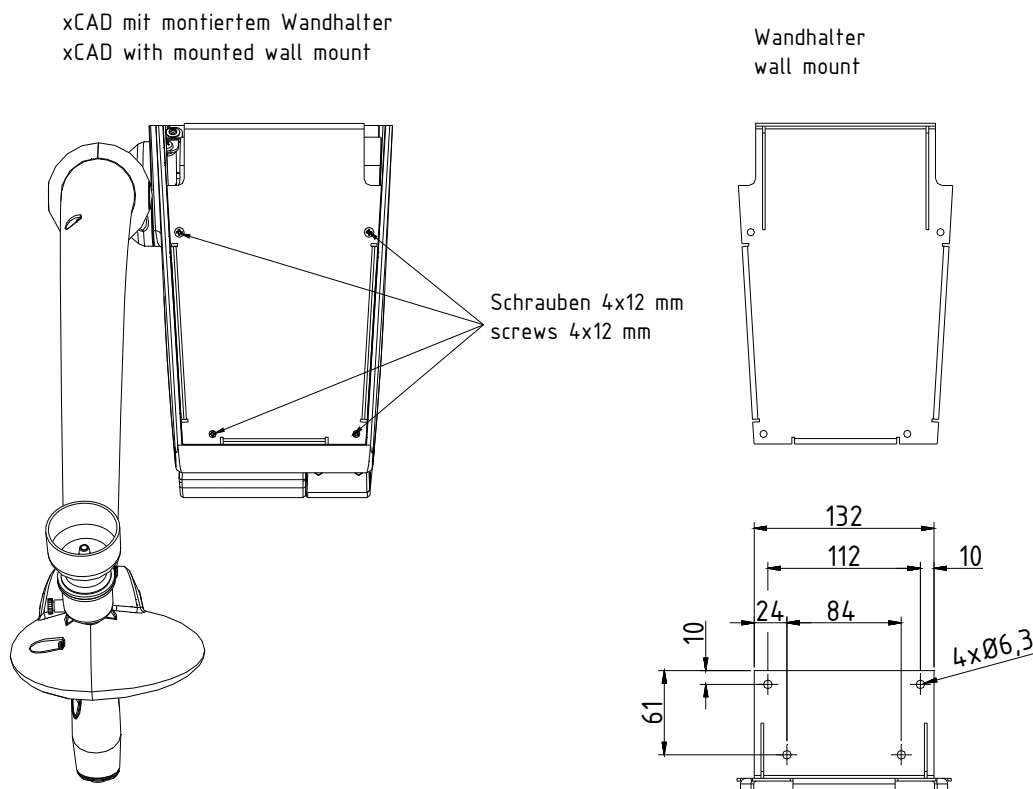
- 1) Remove the cartridge cover from the GenPure system.
- 2) Take the plugs off from the filter cartridge and save them.
- 3) Push the filter cartridge in the guide in the system, plug the quick-connect connectors on so that they audibly click into position and put the cartridge cover back on.
- 4) Connect the 8 mm o.d. hose that is provided in the connector kit to feedwater connector (3) of the GenPure system.
- 5) Now make a pressureless connection between the 8 mm o.d. hose (4) and the drain. The drain to the sewer must be max. 1m above the rinsing water connector of the Unit.
- 6) Plug each of the extension cable cables with 25 pin socket in the sockets (1) and (2) of the GenPure System and screw them tight.  
Then connect the tubing (4 mm and 6 mm) by plugging the connectors (5) and (6) of the system.

- 7) Lead the 25 pin plugs/extension cables and 4 mm and 6 mm o.d. hoses through the wall and connect the 25 pin plug (1) from the GenPure with the socket (1) on the xCAD and the 25 pin plug (2) from the GenPure with the socket (2) on the xCAD.  
**Caution:** Do not interchanging the connections of the 25 pin connector, otherwise no abstraction of water possible!
- 8) Fix the 6 mm und 4 mm o.d. hoses in the hose connectors (5) and 6) of the xCAD.
- 9) If you intend to use the sterile filter (10) that is standardly supplied, screw it in the R 1/4" female thread outlet of the dispensing valve (9) of the xCAD.
- 10) Connect the mains plug (8) of the voltage supply to an earthed 100-240V/50/60Hz socket.
- 11) Open the feedwater supply.
- 12) Check all connections for leaks.

## 9.4 Setting up the system / wall version xCAD

Proceed as follows to set your GenPure with xCAD (wall version) ultra pure water system up ready for use:

### View from below/front



- 1) Release the four screws (4x12 mm) marked above from the xCAD underside and remove the wall mount from it.

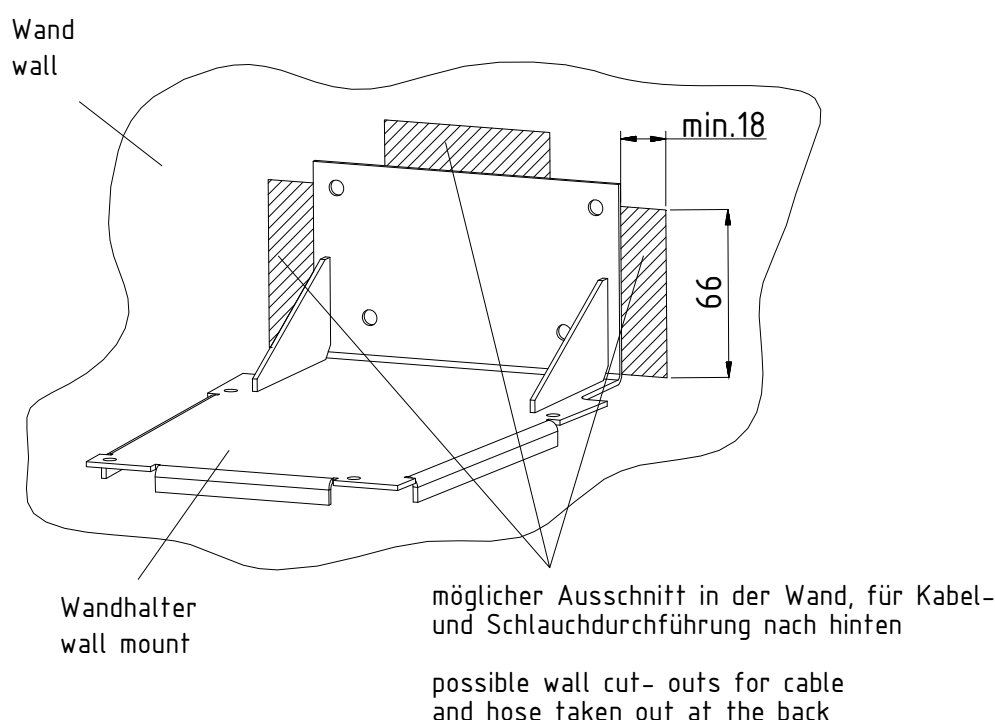
### Installing the wall mount

**Caution:** The included screws and dowels are only intended to fix the wall mount to a concrete wall or a solid masonry!

The two 25 pin plugs/extension cables and the 4 mm o.d. and 6 mm o.d. hoses can be led laterally down the wall or be led out through the wall at the back. There are three possibilities for cut-outs for the cable and hoses (see the next diagram).

**Note:** Only one of these cut-outs is required.

- 2) Hold the wall mount at the wanted position on the wall and mark the four boreholes for the fixing of the wall mount.

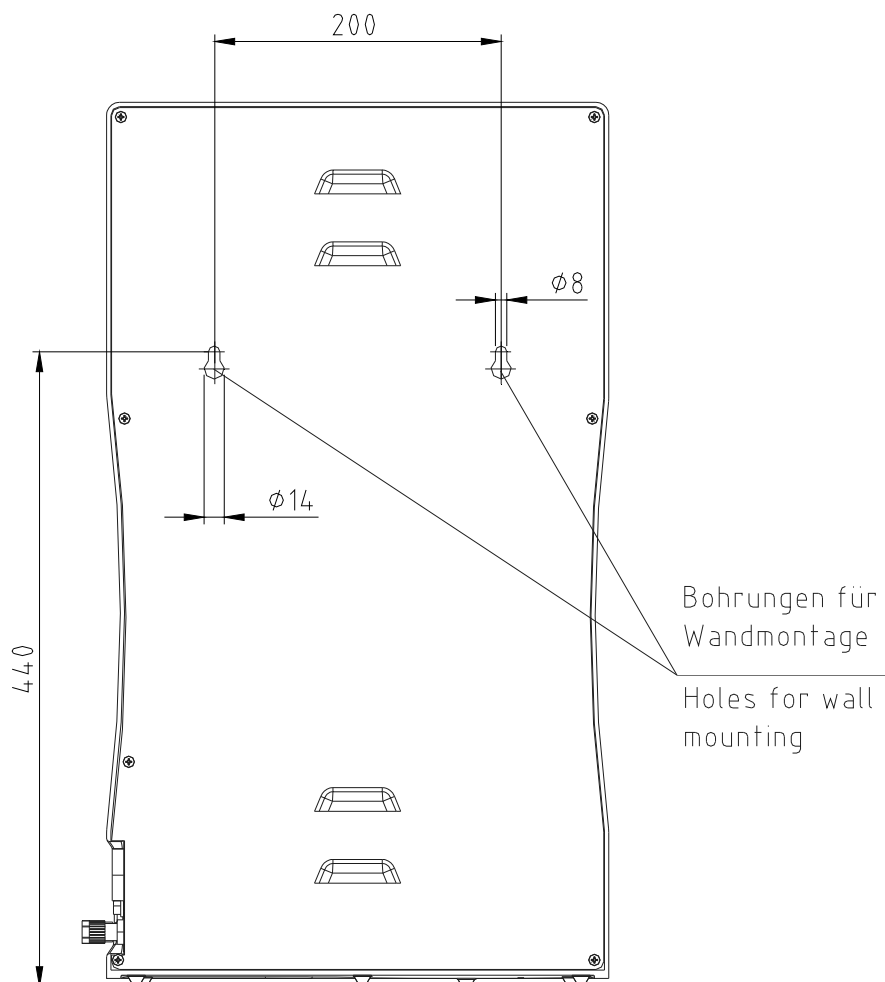


- 3) Bore the holes for the 6 mm plugs and make the necessary cut-out.
- 4) Fix the wall mount in position with the plugs and screws provided.
- 5) Lead the 25 pin plugs/extension cables and 4 mm and 6 mm o.d. hoses through the wall to the wall mount and connect the 25 pin plug (1) from the GenPure with the socket (1) on the xCAD and the 25 pin plug (2) from the GenPure with the socket (2) on the xCAD.  
**Caution:** Do not interchanging the connections of the 25-pin connector, otherwise no abstraction of water possible!
- 6) Fix the 6 mm und 4 mm o.d. hoses in the hose connectors (5) and (6) of the xCAD.
- 7) Now carefully position the xCAD on the wall mount and screw it tight to the wall mount using the four 4x12 mm screws.
- 8) Place the GenPure system at the planned position.

- 9) Take the cartridge cover off of the GenPure system
- 10) Take the plugs off from the filter cartridge and save them.
- 11) Push the filter cartridge in the guide in the system, plug the quick-connect connectors on so that they audibly click into position and put the cartridge cover back on.
- 12) Connect the 8 mm o.d. hose that is provided in the connector kit to the feedwater connector (3) of the GenPure system.
- 13) Now use the 8 mm o.d. hose to make a pressureless connection between the system (connector 4) and the drain. The drain to the sewer must be max. 1m above the rinsing water connector of the Unit.
- 14) Plug the two extension cables with 25 pin plugs in the sockets (1) and (2) of the GenPure system and screw them tight.
- 15) If you intend to use the sterile filter (10) that is standardly supplied, screw it in the R 1/4" female thread outlet of the dispensing valve (9) of the xCAD.
- 16) Open the feedwater supply.
- 17) Check all connections for leaks.

## 9.5 Wall mounting GenPure system

Ansicht von hinten  
 View back side

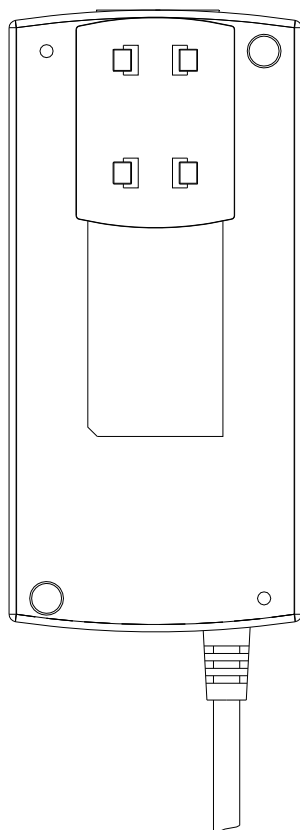


**Proceed as follows to mount your GenPure system to a wall:**

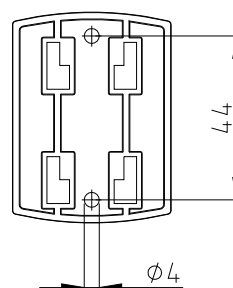
- Use a twist drill (8 mm or 5/16 inch) to make the two holes in the wall that are required as shown in the diagram above.
- Plug the nylon S8 dowels that are supplied in the assembly kit in the holes. Screw the 5.2 x 50 mm screw hooks that are also supplied in the assembly kit in the dowels.
- Lift the GenPure system (2 people are required for this) and hang the back side of it on the screw hooks.

## 9.6 Mounting the power pack (voltage supply)

Back view power supply



Universal adapter

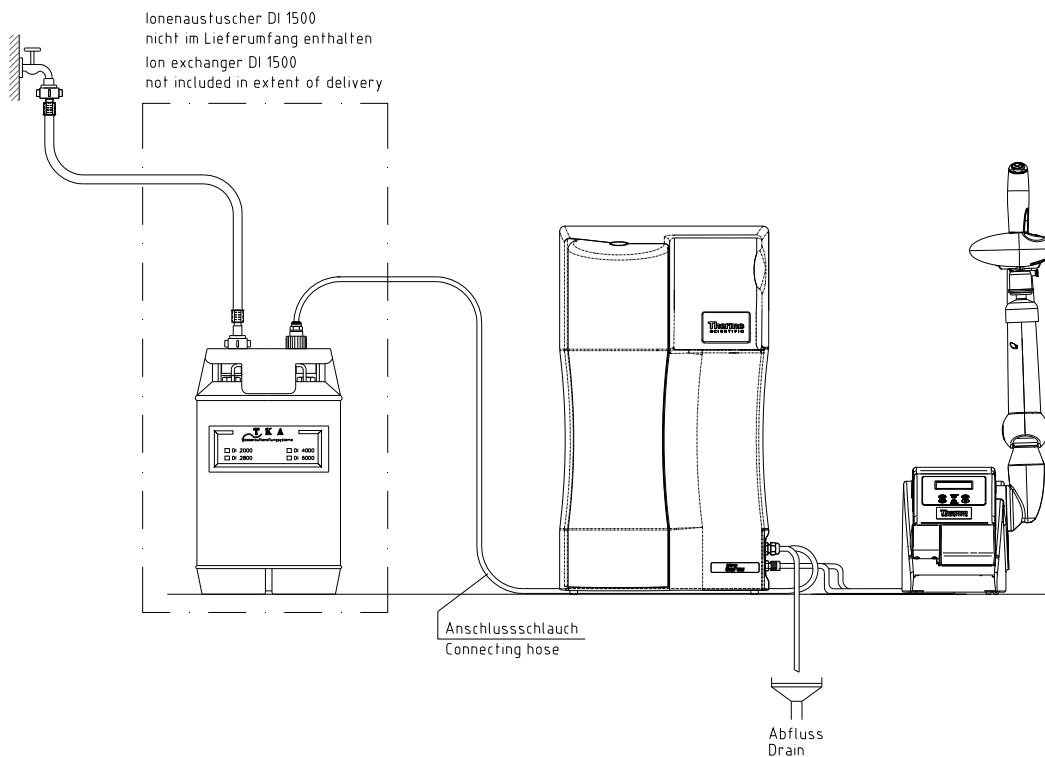


Wall mount  
with screws

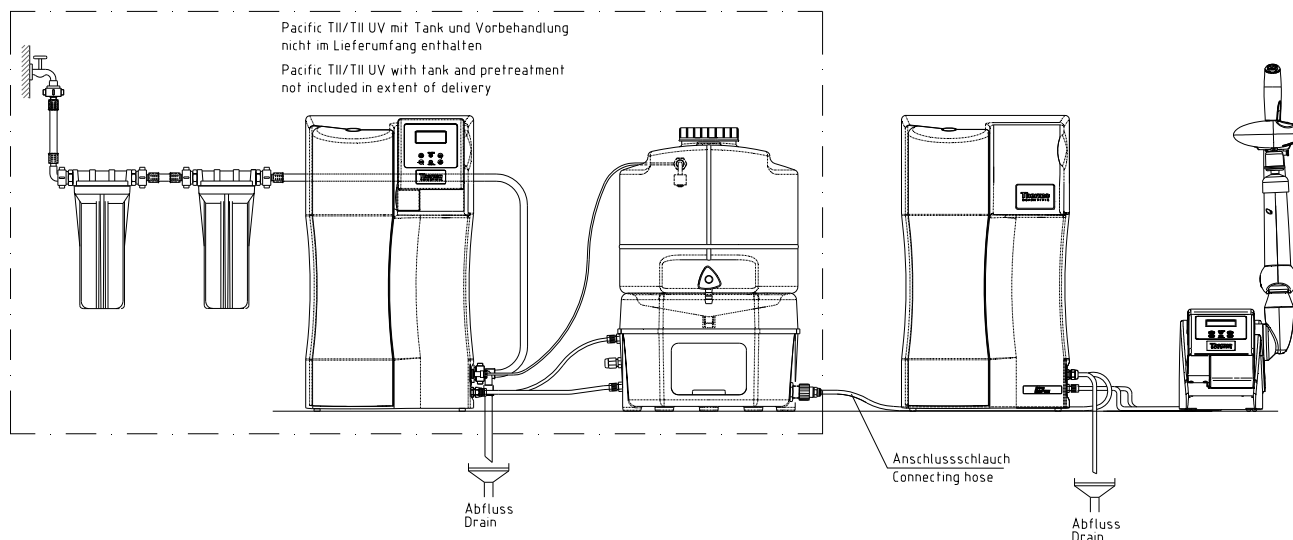
- Whenever possible, mount the power pack on the wall to the left or right of the ultra pure water system where it is freely accessible.
- Stick the universal holder which is supplied in the assembly kit to the back of the power pack as shown in the above Figure.
- Stick the universal adapter to a smooth wall surface or screw it to the wall using the dowels and screws supplied in the assembly kit.
- When the universal holder and universal adapter have been fitted, hang the power pack in.
- Plug the connecting cable (appliance cable) in the power pack socket.
- Connect the power pack to the ultra pure water system (Connectors, GenPure, 4-pin power supply connector, pos. 8) and to an earthed 100 - 240V, 50/60Hz socket.
- The system is now ready for use.

## 9.7 Examples of system set-ups

### Connection to a pretreatment:



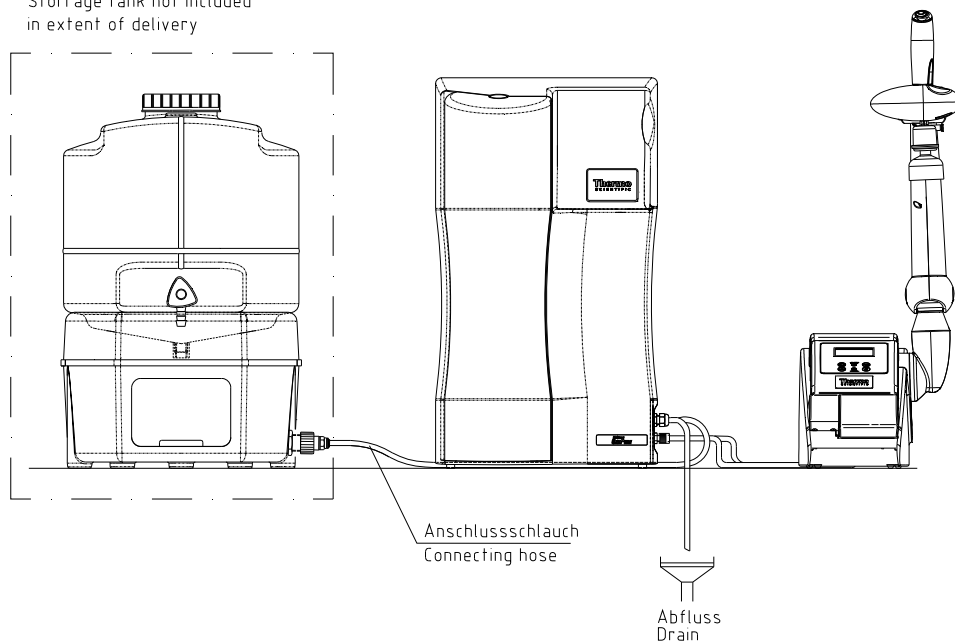
### Connection to a Pacific TII system with storage tank:





**Connection to a storage tank:**

Vorratstank nicht im  
Lieferumfang enthalten  
Storage tank not included  
in extent of delivery



**Caution:** When connected to a storage tank, the system must be switched to “nonstop” operation for ultra pure water dispensing.

## 10. Putting the system into operation



**Allow the system to warm up to, or to cool down to, room temperature before starting it up for the first time.**



**Check that all hose connections have been made as specified in the "Setting up the system" section.**



Switch the system on by pressing this button. After a compulsory rinse the system switches to the last operating mode.



**To vent air from the system, switch the system 3 times successively to "Rinsing" in the menu and collect and discard approx. 5 litres of water each time. The ultra pure water limiting value can be gone below during this procedure.**

NONSTOP



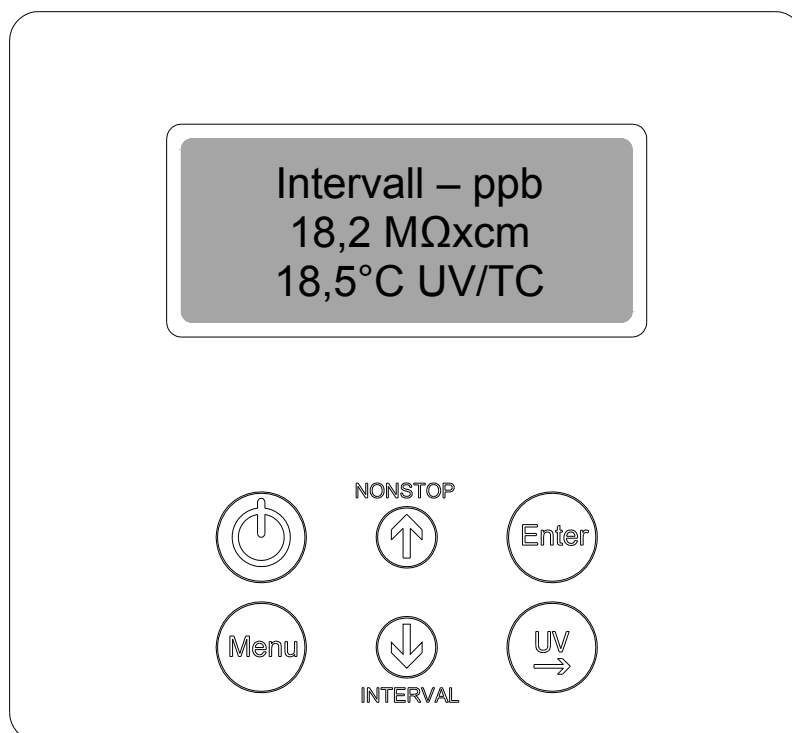
Use this "NONSTOP"-key to switch the system to the "Nonstop" operating mode.



INTERVAL

You can set the system back to "Interval" operation when the system has brought the ultra pure water to the quality you require.

## 11. Operating elements



Switches the system on or off



Switches "Nonstop" operation on or, in the menu, increases a value on display



Confirms the value shown in a menu point



Switches the menu to the next menu point



Switches "Interval" operation on or, in the menu, decreases a value on display



Switches the UV-lamp on or, in the menu, allows you to select the position in a number that you wish to change

## 12. System control

### General information

A press on the ON/OFF-key causes the system to run in the *Interval* operating mode (see Interval mode).

Interval operation then runs automatically every 0.5 hours for the set length of time to ensure the ultra pure water quality.

When the UV-lamp is on, then the "UV" text message is displayed. When temperature compensation of measured values is active, then the "TC" message is displayed. In addition, the measured values for the ultra pure water conductivity and the temperature are displayed.

Should a fault exist, then a fault message is given out across the potential-free output and is shown in line 4 of the display. Should several faults occur simultaneously, then they are alternately displayed.

When the Nonstop-key is now pressed, the system switches to the *Nonstop* mode, the pump is started and the solenoid rinsing valve opens for the set rinsing time. *Nonstop* operation can be stopped by pressing the Interval-key. After a wait of 2 hours, the system switches itself back to the Interval mode.

A press on the UV-key brings "UV" to display. The UV-lamp is only switched on when the system is in the Nonstop mode, however. The UV-lamp switches itself off when the Nonstop mode is ended (2 h). When Nonstop operation is manually stopped by a press on the Interval-key, then the UV-lamp is not switched off until it has been burning for 0.5 hours.

During the time that the UV-lamp is burning, the intensity of the UV-light is monitored. The display of the UV-intensity is made in the menu. The TOC-value is also displayed.

### User-menu

All of the measured values, operating times and limiting values that are relevant for the user can be set and read in this menu.

A press on the menu-key brings you into this menu. Each further press on the menu-key moves you on from one menu prompt to the next.

Settings can be changed with the arrow keys. When you confirm a value by pressing the Enter-key, you are taken to the next menu prompt. Settings can only be made when the system control has been previously unlocked (see section 12.1.8).

To simplify changing settings, a press on the UV-key allows you to select a certain number in the numerical value that you wish to change. The arrow-keys can then be used to enter the wanted number from 0 to 9 at the selected position.

With all three measuring cells for conductivity and with the temperature sensor, a minimum and a maximum measured value are fixed in the programme. Should measured values be below or above these values respectively, then it must be assumed that there is a cable break. In such a case, the appropriate fault message "Measuring cell LF1", "Measuring cell LF2", "Measuring cell LF3" or "Measuring cell Temp." is displayed in line 4.

## 12.1 Menu

### 12.1.1 Feedwater conductivity:

A single press on the menu-key allows the feedwater conductivity to be read and the limiting value of the feedwater conductivity to be set. The fault message that flashes in the fourth line of the display when the feedwater limiting value is exceeded is *"Limit value feed"*.

**Measuring range, feedwater:** 10.0- 0.010 MΩxcm

**Setting range, limiting value:** 0.1- 50.0 μS/cm

**Basic setting:** 0.5 MΩxcm

With settings above 50 μS/cm, the limiting value is switched off and the word *"Off"* is shown in the display.

The display shows:

Feedwater 1.25 MΩxcm Limit value feed 2.0 μS/cm
--

### 12.1.2 Ultra pure water limiting value:

Two presses on the menu-key in this menu allow the fault display for the pure water limiting value and the pure water limiting value to be set. As soon as the fault display is switched on, the fault will be displayed both in Stand-by mode and in Production mode. When the fault display is switched off, the fault is only displayed in Production mode. The "Lim. val.pure w." message is displayed when the limiting value is exceeded.

**Ultrapure water measuring range:** 0.100 MΩxcm

**Limiting value setting range:** 0.055- 5.000 μS/cm

**Basic setting:** 10.0 MΩxcm

**Basic setting, fault suppression:** On

With settings above 5.000 μS/cm, the limiting value is switched off and the word *"Off"* is shown in the display.

The display shows:

Fault message Stand- by On Lim. val.pure w. 0.100 μS/cm
--

### 12.1.3 UV-Lamp operating time and intensity:

In this menu, the operating hours of the UV-lamp are displayed and the input for the UV-sensor is evaluated.

When the maximum operating time is reached, then the "*UV-time*" fault message is triggered. The UV-sensor measures the actual intensity of the UV-lamp. The display shows the % of this compared to the maximum value.

The display shows:

UV Time  
 0000 h  
 UV intensity  
 90%

### 12.1.4 Filter cartridge operating time counter:

The operating time counter for the filter cartridge is set in this menu by a fourth press on the menu-key and the entry of a valid serial number for the filter cartridge..

The display shows:

Ser. No.:  
 Cartridge  
 Press Enter  
 ----/--

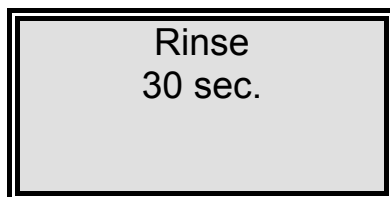
### 12.1.5 Rinsing

A fifth press on the menu key in this menu allows rinsing to be carried out if this is necessary. Triggering is made by confirming the requirement with a press on the Enter-key. The pump is started and the rinsing solenoid valve is opened for the rinsing time period set in the OEM-menu. During rinsing, the count-down of the rinsing time is displayed. When rinsing has finished, the system returns to the last operating mode (Interval or Non-stop).

The display shows:

Rinse ?  
 Press enter

During Rinsing the display shows:



### 12.1.6 Disinfection

A sixth press on the menu-key gives you the possibility of carrying out disinfection. When this menu-prompt is confirmed with Enter, the command *Disinfection cartridge. Install one* is shown. After confirming this with Enter, disinfection is carried out. The pump runs for the disinfection time that has been set in the OEM-menu. When the half of the disinfection time has passed, the rinsing solenoid valve opens and stays open up to the end of the disinfection process. The *"New filter cartridge. Install one"* message is given when the disinfection process has finished

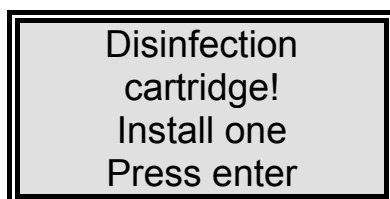
On confirming this with Enter, the system returns to the last operating mode.

During disinfection, the count-down of the disinfection time is shown in the display

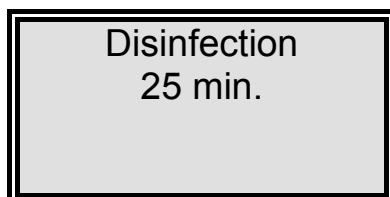
The display shows:



After confirmation with Enter, the display shows:



During disinfection, the display shows:



After disinfection, the display shows:



### 12.1.7 Display of fault storage:

A seventh press on the menu-key calls the fault storage. Confirmation with Enter allows you to look through the faults in the fault storage.

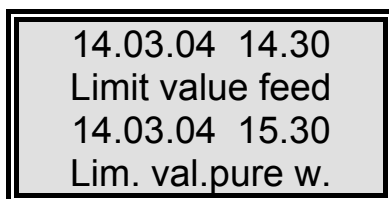
Should several faults have occurred, then two faults, each with date and time, are shown in the display. Appropriate pressing of the arrow-keys brings previous and subsequent faults to display.

A press on the menu-key or the Enter-key returns the display to the last operating mode.

The display shows:



Show of faults in the fault storage:

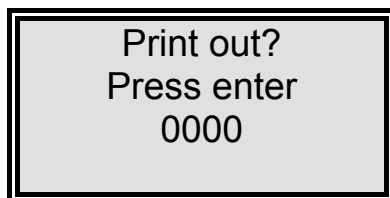




### 12.1.8 Print-out

A eight press on the menu-key bring you to a menu in which you can hand-request a print-out.

The display shows:



### 12.1.9 Unlocking the system

A nine press on the menu-key in this menu brings you to the "Code" menu. To prevent unauthorized access to the settings in the system control, changes to the settings can only be carried out when a correct code from the Assignment Table that follows is entered and confirmed with the Enter-key.

The unlocking remains active for 5 minutes.

Each access via the code is issued to the printer (RS 232) complete with date, time and abbreviated code number ("Code 0001" corresponds to code 150, "Code 0002" to code 250 etc.).

The display shows:



Code numbers can be assigned to individual persons in the Assignment Table on the following page.

Please remove this page from the Operating Instructions and store it where it is safe from unauthorized viewing.

## Assignment Table for code numbers that allow the system to be unlocked

Code no.	Printer output	Person
150	0001	
250	0002	
350	0003	
450	0004	
550	0005	
650	0006	
750	0007	
850	0008	
950	0009	

## 12.2 OEM-Menu:

Basic settings and limiting values can be changed in this menu.

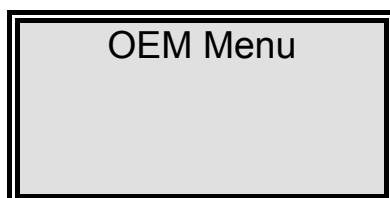
To make changes in the OEM menu, the system control must previously be unlocked (see section "Menu" Unlocking the system).

Calling the OEM menu:

Simultaneous pressing of the Interval-key and the Nonstop-key calls the OEM menu. Following this, the prompt *"OEM menu Press Enter"* appears. When this is confirmed with the Enter-key, the first menu prompt can be worked on. To simplify changing settings, press the UV-key to select the number in a numerical value which you want to change. Now use the arrow keys to enter the wanted number from 0 to 9 at that selected position.

A press on the menu-key takes you to the next menu prompt.

The OEM menu call display shows:



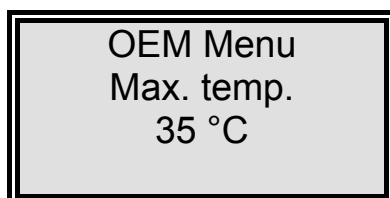
### 12.2.1 Setting the maximum operating temperature:

The maximum temperature which the system is to be allowed to reach can be set in this menu. When this temperature is exceeded, the *"max. Temperature"* fault message is triggered.

It is shown in the 4th line of the display.

**Basic setting:**        50 °C  
**Setting range:**     1 - 50 °C

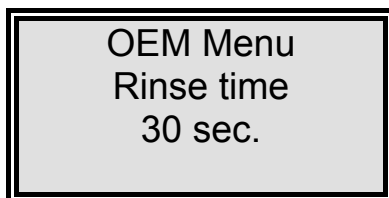
The display shows:



### 12.2.2 Setting the rinsing time:

**Basic setting:** 30 sec.  
**Setting range:** 10 - 60 sec.

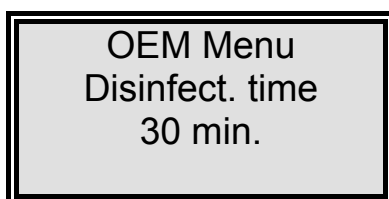
The display shows:



### 12.2.3 Changing the disinfection time:

**Basic setting:** 30 min.  
**Setting range:** 15 - 90 min.

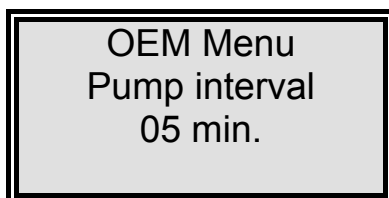
The display shows:



### 12.2.4 Setting the interval pump time:

**Basic setting:** 5 min.  
**Setting range:** 1 - 30 min.

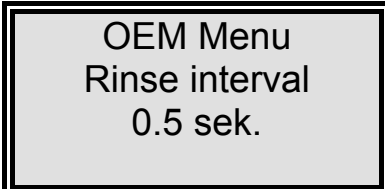
The display shows:



### 12.2.5 Setting the interval rinse time:

**Basic setting:** 0.5 sec.  
**Setting range:** 0.1 - 2 sec.

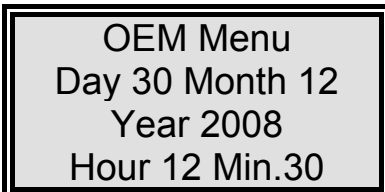
The display shows:

A rectangular display box with a double border. The text inside is centered and reads: OEM Menu, Rinse interval, 0.5 sek.

### 12.2.6 Setting the real-time clock:

**Basic setting:** The actual date  
**Setting range:** 1 - 12 Month, 1 - 31 day, 0 - 24 h, 0 - 60 min.

The display shows:

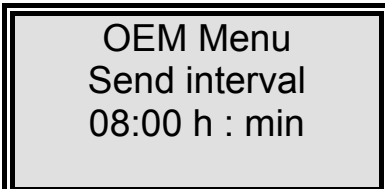
A rectangular display box with a double border. The text inside is centered and reads: OEM Menu, Day 30 Month 12, Year 2008, Hour 12 Min.30.

### 12.2.7 Setting the sending interval:

In this menu, the sending interval is set for transmissions of measured values and fault messages to the RS 232 interface.

**Basic setting:** 1 hour  
**Setting range:** 0.5 - 12 hours

The display shows:

A rectangular display box with a double border. The text inside is centered and reads: OEM Menu, Send interval, 08:00 h : min.

### 12.2.8 Selecting the language:

**Basic setting:** English  
**Setting range:** Englisch, French, German

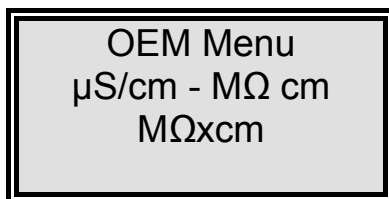
The display shows:



### 12.2.9 Switching units:

**Basic setting:** Resistance MΩxcm  
**Setting range:** Resistance MΩxcm,  
Specific electrical resistance MΩ cm

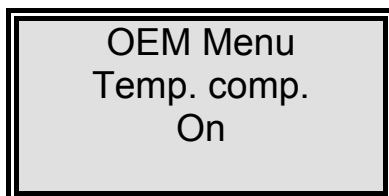
The display shows:



### 12.2.10 Switching temperature compensation on or off:

**Basic setting:** on  
**Setting range:** on, off

The display shows:

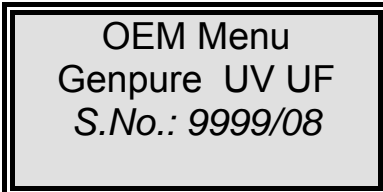


### 12.2.11 Entering the system type and serial number:

This menu prompt is for the entry of the system type and the serial number of it. Both entries are given in the headline of each print-out. Settings are made with the arrow keys. The system type and the serial number can also be briefly seen when the on/off-key is pressed (on booting).

The serial number has six characters including a slash and can be entered with the arrow keys just as all other entries.

The display shows:



```

  OEM Menu
  Genpure UV UF
  S.No.: 9999/08
  
```

### 12.2.12 Water dispensing via volume control

As soon as the Nonstop-mode is selected, then a litre volume is shown in line 2 of the display. This is the volume of ultra pure water that was last dispensed.

A single press on the push button on the grip allows the litre volume to be changed within the range from 0.01 bis 65.5 litres by means of the arrow-keys. The UV-key can be used to position the cursor at a particular number that you wish to change.

A second press on the push button causes dispensing of the volume of water that has been set. The litre volume shown in the display is the actual volume that has been dispensed. Dispensing stops as soon as the set volume has been reached.

Dispensing can be stopped at any time by a further press on the press button.

Manual dispensing can also be made of any volumes within the set volume by two presses on the press button to start dispensing and a further press to stop it.

The display shows:



```

  Nonstop 5 ppb
  18.2 MΩxcm 1.00L
  21.3°C UV/TC
  
```

## 12.3 Printer output

Various parameters are recorded by the printer. A differentiation is made between three types of messages:

- Standard messages
- Code messages
- Fault messages

### 12.3.1 Standard messages:

Here a record of all measured values is printed out in dependence on the sending interval. A complete data set is also printed out during NONSTOP-operation.

Print-out:

e.g.:           03.04.08 15:15  
                  GenPure Standard  
                  S.No. 3988/08  
                  Interv. TC on UV off  
                  LF1= 18.2 MΩxcm  
                  LF2= 10.0 MΩxcm  
                  LF3= 0.000 MΩxcm  
                  Temp.= 16.8 °C  
                  TOC= 0 ppb  
                  UV Intens.= 0%

The standard record includes all measured values. With systems that are not equipped with TOC measurement and UV-intensity measurement, 0 is given as measured value!

### 12.3.2 Code messages:

Whenever a code number is entered in the system control and confirmed with the Enter-key, then the code input is immediately printed out.

For code identification refer to the "Assignment Table for code numbers that allow the system to be unlocked".

Print-out:

e.g.:           03.04.08 15:17  
                  GenPure Standard  
                  S.No. 3988/08  
                  Code 0002



### 12.3.3 Fault messages:

When a fault message is shown in the display, e.g. for the ultra pure water limiting value, then the fault message is printed out at the end of the sending interval.

Print-out:

e.g.:           03.04.08 17:09  
          GenPure Standard  
          S.No. 3988/08  
          Lim val.pure w.

## 13. Maintenance

Regular maintenance of your system maintains the value of it. We recommend that you close a service contract with your service company. You then have the certainty of a high operational safety and reliability.

### NOTE!

To ensure that your system will work reliably for a long time, it must be checked, serviced and cared for at regular time intervals in accordance with these Operating Instructions. For this reason, the Operating Instructions must be readily available to operating and maintenance staff at all times, and be carefully followed.

Any maintenance work should become necessary during the validity of the guarantee, this is only to be carried out by a service professional which is expressly authorized to do such work.

The staff who are trained on and operate the system are committed to carry out daily/weekly checks.

The maintenance work specified on the maintenance record supplied with these Operating Instructions should to be carried out weekly.

### CAUTION!

The cleaning and disinfection of your system is performed for reasons of hygiene and has no effect on the technical condition of the system.

The system must only be cleaned and disinfected when algae or slime are detected inside it, or at least once yearly.



Checks or maintenance work on electrical equipment are only to be made after turning the system off at the mains switch to make it currentless and ensuring that it will not be inadvertently turned back on. Such work is only to be carried out by qualified electricians

## 13.1 Maintenance intervals

Consumable materials are to be replaced at the intervals given in the following Table or when there is a drop in performance:

Material	Flow chart no.	Article no.	Interval*
Filter cartridge	F1	09.2005	12 Months
Sterilefiltercapsule	F2	09.1003	12 Months
Ultrafiltration membrane	F3	50133980	24 Months

\*Please keep in mind that the life of your consumables is directly dependent on the quality of the feed water and the amount of water used daily. The interval is contingent on the feedwater quality so that a shorter one may be necessary.

## 13.2 Replacing the filter cartridge



The filter cartridge is to be replaced when the maximum limiting value that you have set for the ultra pure water is exceeded or when the "New Filter cartridge" message is shown in the display.

Proceed as follows to replace the filter cartridge:

1. Shut off the supply of feedwater.
2. Press the press button on the xCAD for water dispensing until no more water emerges and push it again to stop dispensing.
3. Switch the system off.
4. Remove the cartridge cover.
5. Take off the quick-connects from the feed and ultra pure water sides of the filter cartridge and close the connectors with the stoppers you have saved.
6. Draw the spent filter cartridge out from the guide and push the new filter cartridge in.
7. Remove the stoppers from the new filter cartridge and save them.
8. Fit the quick connects to the filter cartridge so that they audibly click into position.
9. Replace the cartridge cover.
10. Open the supply of feedwater.
11. Switch the system on.
12. Dispense and discard at least 5 litres of water.
13. To set the operating time counter of the filter cartridge back to zero, enter the serial number that is given on the filter cartridge as is described in "Filter cartridge operating time counter" section.

**Caution:** To do this, the system must be unlocked, as is described in the "Unlocking the system" section.



Switch the system to the "Rinsing" operating mode to vent air out of it.

### 13.3 Disinfection



**Disinfection should be regularly carried out, at the latest when the filter cartridge is replaced.**

To disinfect the system you require a Disinfection cartridge, article no. 09.2201.

Use cleaning solutions as follows:

MICRO-Chlor Granulate, 1 box, article no. 09.2202 (Europe only)

Cleaning Solution, 1 syringe, article no. CMX 25 (US-market only).



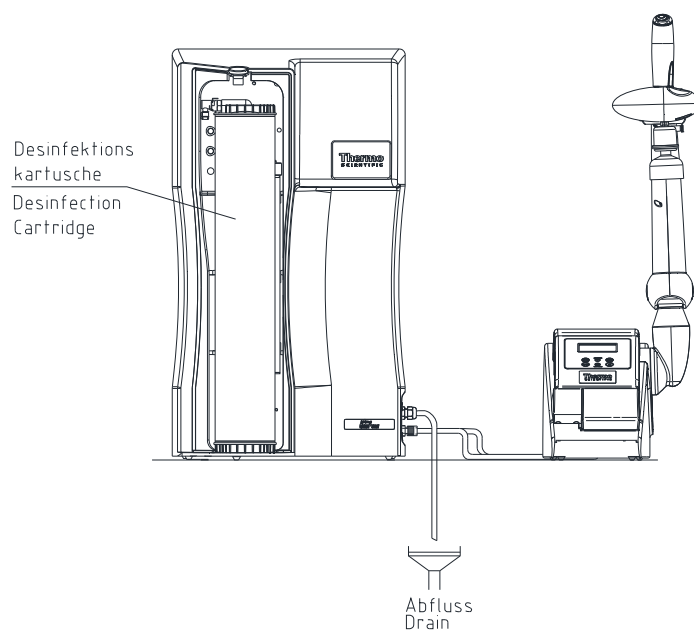
**Please observe the information given in the safety data sheet supplied with Micro-Chlor disinfectant to avoid possible health hazards!**

#### Proceed as follows to disinfect your system:

1. Switch the GenPure system off.
2. Shut off the supply of feedwater to the system and open the dispensing valve so that pressure in the system is completely released.
3. Remove the filter cartridge (as under "Changing the filter cartridge" in the Operating Instructions for the system).
4. Unscrew the stopper from the disinfectant cartridge, fill the cartridge with water then empty the contents of a box respectively a syringe of the cleaning solution into the water.  
**Important! For effective disinfection the cartridge must be completely filled with water.**
5. Screw the stopper back on the disinfectant cartridge and connect the cartridge in the system (as under "Changing the filter cartridge" in the Operating Instructions for the system).
6. Re-open the feedwater supply.
7. Switch the system on and select the "Disinfection" prompt in the menu. The disinfection programme is finished after approx. 30 minutes.
8. Switch the system off.
9. Shut off the supply of feedwater to the system.
10. Remove the disinfectant cartridge (as under "Changing the filter cartridge" in the Operating Instructions for the system).
11. Connect the new filter cartridge in the system (as under "Changing the filter cartridge" in the Operating Instructions for the system).



**Before dispensing water from the system, let water run out for approx. 15 minutes. The system is then ready for use.**



## 14. Waste disposal

When the packaging is no longer needed it can be disposed of as household waste.

Systems are in conformity with EEC Guideline 2002/95/EC

The system is not to be thrown away as household waste but must be properly disposed of. It can be returned to the manufacturer for safe disposal according to EEC Guideline 2002/96/EC. We therefore request our customers in Germany and other member States in the European Economic Area to contact our local service centre or our headquarters:

Thermo Electron LED GmbH  
Stockland 3  
D-56412 Niedereibert, Germany

WEEE-Reg.-no.: DE 12471402

In countries outside of the European Economic Area, please contact your local authorities or waste disposal company.

## 15. Trouble shooting

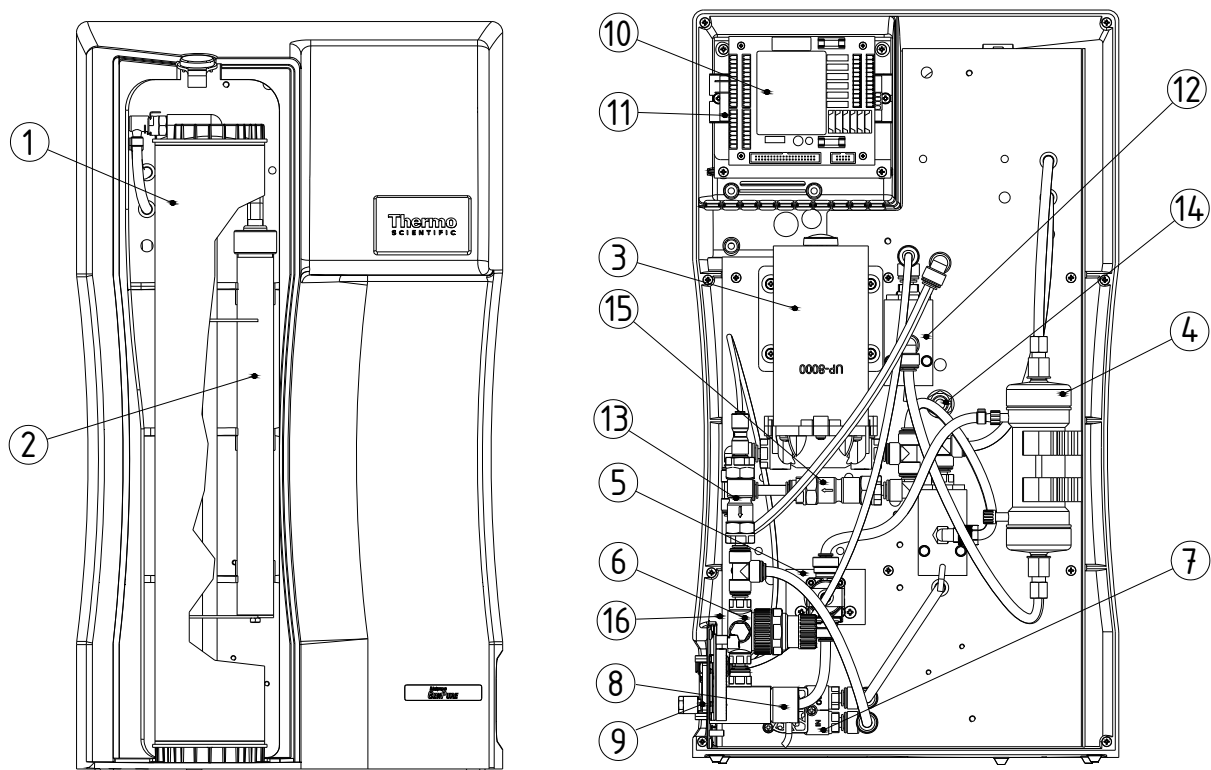
Fault	Cause	Remedy
The system does not start	- No supply of power	- Provide power
Dispensing not possible	<ul style="list-style-type: none"> <li>- Feedwater tap is closed</li> <li>- Feedwater and rinse water connections mixed up</li> <li>- Feedwater pressure &lt; 0.1 bar</li> </ul>	<ul style="list-style-type: none"> <li>- Open feedwater tap</li> <li>- Correct the connections</li> <li>- Increase feedwater pressure</li> </ul>
Resistance < 18.2 MΩxcm	<ul style="list-style-type: none"> <li>- System has a UF-module (higher conductivity possible)</li> <li>- Ion exchange capacity exhausted</li> </ul>	- Replace filter cartridge with a new one
System control no longer reacts	- Improper operation	- Unplug the mains plug for 5 seconds
Water flows out	<ul style="list-style-type: none"> <li>- Leaky hose connection</li> <li>- Feedwater pressure &gt; 6 bar</li> </ul>	<ul style="list-style-type: none"> <li>- Check and seal the hose connection</li> <li>- Install a pressure reducer</li> </ul>
Dispensed water flow rate is too low	<ul style="list-style-type: none"> <li>- UF-Module blocked</li> <li>- Pre-pressure too low</li> <li>- Internal pressure too low</li> </ul>	<ul style="list-style-type: none"> <li>- Replace UF-module</li> <li>- Increase pre-pressure</li> <li>- Readjust pressure reducer</li> </ul>
Wrong time or date	<ul style="list-style-type: none"> <li>- Time zone</li> <li>- Summer/winter time</li> </ul>	- Reset time and date
Wrong language	- Wrong language set	- Correct language setting
Fault message: "Limit value feed"	<ul style="list-style-type: none"> <li>- Feedwater conductivity too high</li> <li>- Limiting value set too low</li> </ul>	<ul style="list-style-type: none"> <li>- Check the pretreatment</li> <li>- Check and suit the limiting value</li> </ul>



Fault message: <i>"Lim. val.pure w."</i>	<ul style="list-style-type: none"> <li>- Filter cartridge exhausted</li> <li>- Limiting value set too low</li> <li>- System has a UF-module (higher conductivity possible)</li> </ul>	<ul style="list-style-type: none"> <li>- Replace with new filter cartridge (art.-no.: 09.2005)</li> <li>- Check and suit the limiting value</li> </ul>
Fault message: <i>"UV-time"</i>	<ul style="list-style-type: none"> <li>- UV-Lamp operating time has been exceeded</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the UV-lamp (art.-no. 09.2002) and reset the operating time counter (see 12.1.4)</li> </ul>
Fault message: <i>"UV-intensity"</i>	<ul style="list-style-type: none"> <li>- UV-Lamp intensity no longer sufficient</li> <li>- UV-Sensor dirtied</li> <li>- Limiting value set too low</li> </ul>	<ul style="list-style-type: none"> <li>- Replace and measure in a new UV-lamp</li> <li>- Clean UV-sensor</li> <li>- Check and suit the limiting value</li> </ul>
Fault message: <i>"max.Temperature"</i>	<ul style="list-style-type: none"> <li>- The temperature in the system is too high</li> <li>- Interval pump time too long</li> <li>- Limiting value set too low</li> <li>- Feedwater temperature too high</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce temperature by running water off</li> <li>- Reduce interval pump time</li> <li>- Check and suit the limiting value</li> <li>- Reduce feedwater temperature</li> </ul>
Fault message: <i>"Measuring cell LF1"</i>	<ul style="list-style-type: none"> <li>- Measuring cell cable break</li> <li>- System control defect</li> <li>- Conductivity of ultra pure water outside measuring range</li> </ul>	<ul style="list-style-type: none"> <li>- Replace measuring cell</li> <li>- Replace system control</li> <li>- see "Conductivity &lt; 18.2 MΩxcm"</li> </ul>
Fault message: <i>"Measuring cell LF2"</i>	<ul style="list-style-type: none"> <li>- Measuring cell cable break</li> <li>- System control defect</li> <li>- Feedwater conductivity outside measuring range</li> </ul>	<ul style="list-style-type: none"> <li>- Replace measuring cell</li> <li>- Replace system control</li> <li>- see "Limit value.feed"</li> </ul>
Fault message: <i>"Measuring cell LF3"</i>	<ul style="list-style-type: none"> <li>- Measuring cell cable break</li> <li>- System control defect</li> </ul>	<ul style="list-style-type: none"> <li>- Replace measuring cell</li> <li>- Replace system control</li> </ul>
Fault message: <i>"Measuring cell Temp."</i>	<ul style="list-style-type: none"> <li>- Measuring cell cable break</li> <li>- System control defect</li> </ul>	<ul style="list-style-type: none"> <li>- Replace measuring cell</li> <li>- Replace system control</li> </ul>
Fault message: <i>"New Filter cartridge"</i>	<ul style="list-style-type: none"> <li>- Filter cartridge operating time has expired</li> </ul>	<ul style="list-style-type: none"> <li>- Replace with new filter cartridge (art.-no.: 09.2005)</li> </ul>

## 16. Replacement parts and consumables

### 16.1 GenPure

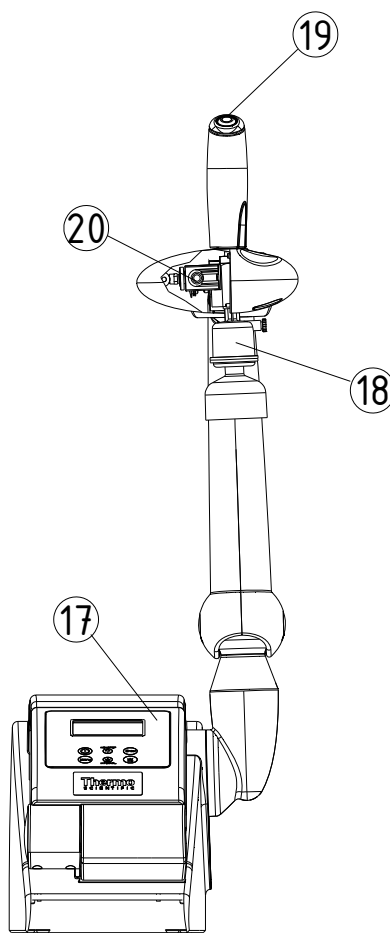


No.	R+I no.	Article designation	Article no.
1	A-F1	Filter cartridge	09.2005
2	A-UV1	Replacement UV-lamp	09.2002
3	A-P1	Pressure booster pump	19.0050
4	A-F3	Ultrafiltration module (optional)	50133980
5	V4	Rinsing solenoid valve	50131190
6	V1	Pressure reducer	50133985
7	FIS400	Flowmeter	15.0100
8	QIA300	Conductivity measuring cell, feedwater	16.0126
9		Adapter board	16.0364
10		Microprocessor-system control, interface	50131346
11		Booster for UV-lamp (optional)	22.0088
12	QIA303	Conductivity measuring cell, ultra pure water	50133992
	TIA500	Conductivity measuring cell, temperature sensor	
13	V2	Check valve	15.0009
14	QIA301	UV-Intensity sensor (optional)	16.0222
15	V5	Check valve	15.0019
16		Fuseholder for glas tube fuse, 5x20mm	50133979
		Glas tube fuse, 5x20mm, 3.15 A, slow	50131758
		Table top power pack, 24V DC (not showns)	50134196



We ask for your understanding that the guarantee that we give becomes invalidated when replacement parts, accessories or consumables from other manufacturers are used in or for the system, as we have no influence on their appropriateness, composition or quality.

## 16.2 xCAD



No.	R+I no.	Article designation	Article no.
17		Microprocessor-system control	26.0025
18	A-F2	Sterile filter capsule, 0,2 µm	09.1003
19		Press button	16.0370
20	V3	Solenoid valve	15.0101
		Extension cable SUB-D, 25 pin, GenPure/xCAD	16.0375

## 17. Consumables and accessories

Article designation	Article no.
Ion exchanger system DI 1500	02.1500
Disinfection agent, MICRO-Chlor (pack of 12 cans, Europe only)	09.2202
Cleaning Solution, 1 syringe (US-market only)	CMX25
Disinfection cartridge	09.2201
Printer	09.2207
Qualification documents IQ, OQ	IOQDOCE50133918

The address to contact when your system requires service:

### Overview of Thermo Scientific International Sales Organization

#### Postal address USA:

Thermo Scientific  
 275 Aiken Road  
 Asheville, NC 28804  
 USA

#### Enquiries from USA/Canada

**Sales:** +1 866 984 3766  
**Service:** +1 800 438 4851

#### Enquiries from Latin America

**Sales:** +1 866 984 3766  
**Service:** +1 866 984 3766

#### Enquiries from Asia

##### China

**Sales:** +86 10 8419 3588  
**Service:** Toll free 8008105118  
 Support Mobile 4006505118 or +86 10 8419 3588

##### India

**Sales:** +91 22 6716 2200  
**Service:** Toll free 1 800 22 8374 or +91 22 6716 2200

##### Japan

**Sales:** +81 45 453 9220  
**Service:** +81 45 453 9224

#### Enquiries from the Rest of Asia/Australia/New Zealand

**Sales:** +852 2885 4613  
**Service:** +65 6872 9720

#### Enquiries from Countries not listed / Rest of EMEA

**Sales:** +49 6184 90 6940 or +33 2 2803 2000  
**Service:** +49 6184 90 6940

#### Enquiries from Europe

##### Austria

**Sales:** +43 1 801 40 0  
**Service:** +43 1 801 40 0

**Belgium****Sales:** +32 53 73 4241**Service:** +32 53 73 4241**Finland/Nordic/Baltic countries****Sales:** +358 9 329 100**Service:** +358 9 329 100**France****Sales:** +33 2 2803 2180**Service:** +33 825 800 119**Germany:****Postal Address Germany:**

Thermo Electron LED GmbH

Robert-Bosch-Straße 1

D - 63505 Langenselbold

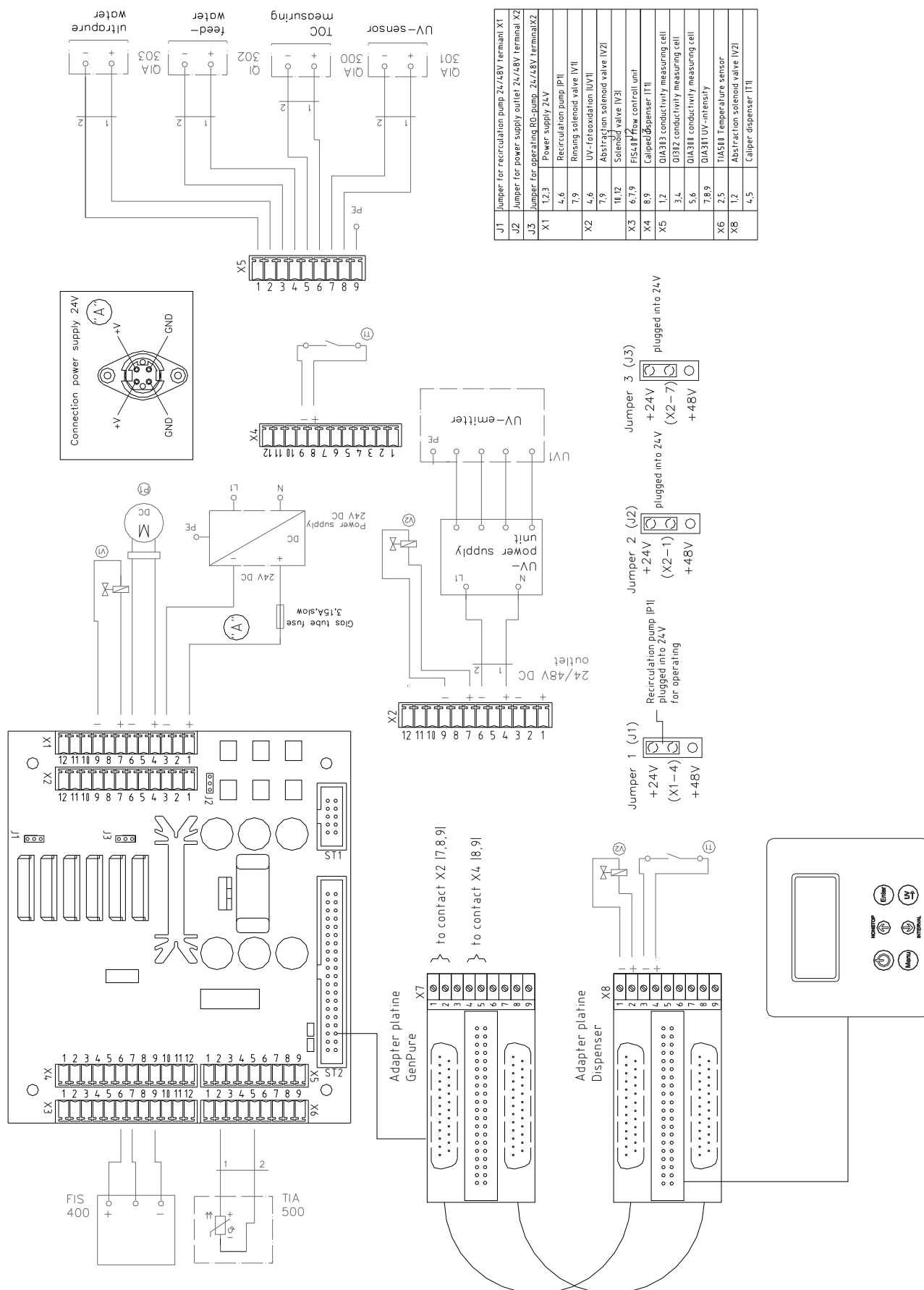
**Phone****Sales:** Toll free 0800 1 536 376

or +49 6184 90 6940

**Service:** Toll free 0800 1 112110

or +49 6184 90 6940

**E-Mail:** [info.labequipment.de@thermoftsher.com](mailto:info.labequipment.de@thermoftsher.com)**Italy****Sales:** +39 02 95059 341**Service:** +39 02 95059 250**Netherlands****Sales:** +31 76 579 5555**Service:** +31 76 579 5639**Russia/CIS****Sales:** +7 812 703 4215**Service:** +7 812 703 4215**Spain/Portugal****Sales:** +34 93 223 0918**Service:** +34 93 223 0918**Switzerland****Sales:** +41 44 454 1212**Service:** +41 44 454 1212**UK/Ireland****Service:** +44 870 609 9203**Sales:** +44 870 609 9203



## 19. Maintenance record

(Correct keeping of this maintenance record is a condition of the guarantee)

**Customer address:**

**Location:**

**System type:**

**Serial no.:**

**Year made:**

Date	Feedwater resistance [MΩxcm]	Ultra pure water resistance [MΩxcm]	Ultra pure water volume flow [L/h]	Temperature [°C]	TOC-value [ppb]	UV-intensity [%]	UV-lamp operating time, [h]

Last change of filter cartridge	Last cleaning / disinfection	Last change of pretreatment	Remarks	Signature

Any false entry is considered to constitute a falsification of documents.

**The following points are to be observed to safeguard the quality of the system:**

- 1x Weekly, enter measured values.



The pretreatment must be checked and replaced at regular intervals to ensure the optimal ultra pure water quality.

## Contact Information Thermo Scientific

### North America:

USA/Canada +1 866 984 3766 (866-9-THERMO)

### Europe:

Austria +43 1 801 40 0, Belgium +32 53 73 42 41, France +33 2 2803 2180,  
Germany national toll free 08001-536 376,  
Germany international +49 6184 90 6940, Italy +39 02 95059 448,  
Netherlands +31 76 579 55 55, Nordic/Baltic/CIS countries +358 9 329 10200,  
Russia +7 812 703 42 15, Spain/Portugal +34 93 223 09 18,  
Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203

### Asia:

Australia +61 39757 4300, China +86 21 6865 4588 or +86 10 8419 3588,  
India toll free 1800 22 8374, India +91 22 6716 2200,  
Japan +81 45 453 9220, New Zealand +64 9 980 6700,  
Other Asian countries +852 2885 4613

**Countries not listed:** +49 6184 90 6940